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A review of the genus *Macrotarsipus* Hampson, [1893] (Lepidoptera, Sesiidae) of the Oriental region*

Yutaka ARITA¹⁾ & Oleg G. GORBUNOV²⁾

¹⁾ Zoological Laboratory, Faculty of Agriculture, Meijo University,
Tempaku-ku, Nagoya, 468 Japan

²⁾ Institute for the Problems of Ecology and Evolution, Russian Academy of Sciences,
Leninsky prospekt 33, Moscow 117071, Russia**

Abstract The genus *Macrotarsipus* Hampson, [1893] is reviewed with a redescription and new illustrations of *M. albipunctus* Hampson, [1893] as well as the description of a new species, *M. similis* sp. nov. *M. albipunctus* is recorded from Vietnam for the first time.

Key words Lepidoptera, Sesiidae, *Macrotarsipus*, *M. albipunctus*, *M. similis* sp. nov., Oriental Region, taxonomy.

The genus *Macrotarsipus* was originally erected by Hampson, [1893] for the type species *Macrotarsipus albipunctus* Hampson, [1893] deriving from Bhámo, Burma [Myanmar]. Subsequently, Hampson (1919) included three more taxa in *Macrotarsipus* : *Sesia africana* Beutenmüller, 1899, with a synonym *Aegeria belia* Druce, 1910, and his new species *M. microthyris* Hampson, 1919. Somewhat later, Meyrick (1935) described still one more species, *M. lioscelis*. Heppner and Duckworth (1981) listed all these five taxa (*belia* as a synonym of *africana*) in *Macrotarsipus*. All these species, excluding the type species *albipunctus* are from the Afrotropical Region. We completely agree with the opinion of Robinson *et al.* (1994) that “.. They are not closely related to each other or to *albipunctus*” and exclude them from the genus *Macrotarsipus* herein.

In the course of our study of Oriental clearwing moths (Sesiidae), we have discovered that the genus *Macrotarsipus* actually includes two species : *albipunctus* Hampson, [1893] and *similis* sp. nov. In the present paper we redescribe the genus *Macrotarsipus* and its type species *albipunctus* and describe a new species, *similis* sp. nov., based on a few specimens, both male and female, deriving from Thailand and Indonesia. Besides, *M. albipunctus* is recorded from Vietnam for the first time.

Material examined or cited herein is deposited in the following collections abbreviated in the text as follows :

BMNH—The Natural History Museum, London, Great Britain.

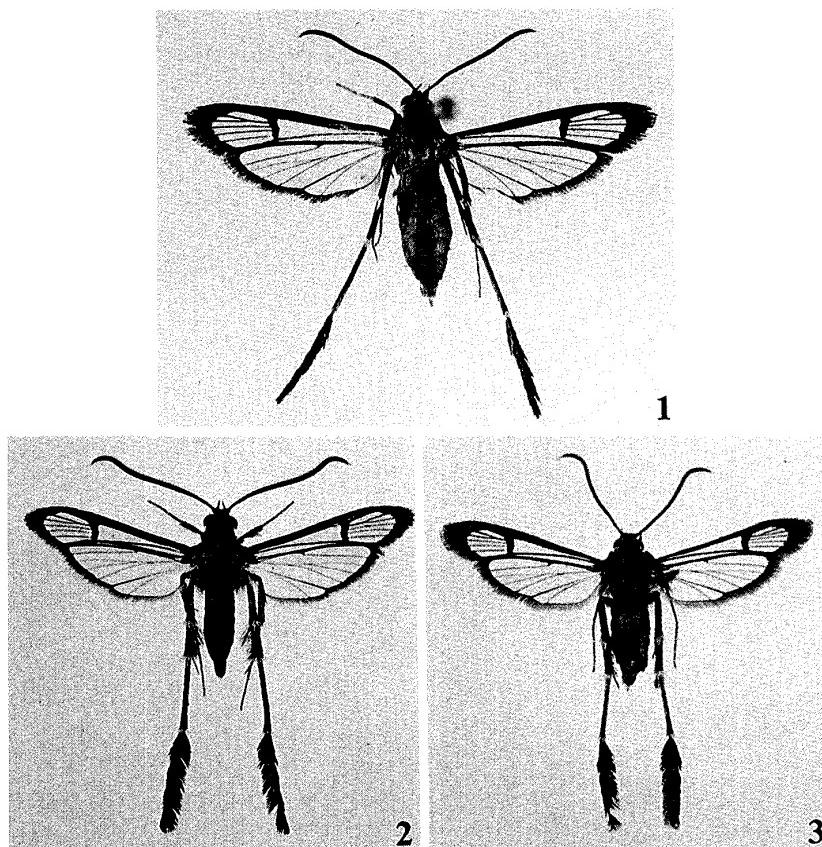
MUT—Zoological Laboratory, Faculty of Agriculture, Meijo University, Nagoya, Japan.
CG—collection of O. Gorbunov, Moscow, Russia.

***Macrotarsipus* Hampson**

Macrotarsipus Hampson, [1893] : 187 (key), 194. Type species : *Macrotarsipus albipunctus* Hampson, [1893], by original designation ; Hampson, [1893] : 194 ; Hampson, 1919 : 58 (part.) ; Dalla Torre & Strand, 1925 : 7 (part.) ; Gaede, 1933 : 779 ; Heppner & Duckworth, 1981 : 43 (part.) ; Fletcher &

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** Visiting Scholar of Zoological Laboratory, Faculty of Agriculture, Meijo University, Tempaku-ku, Nagoya, 468 Japan



Figs 1-3. *Macrotarsibus* spp. 1. *M. albipunctus* Hampson, [1893], ♀, Vietnam (CG). Alar expanse 23.6 mm. 2. *M. similis* sp. nov., holotype, ♂ (MUT). Alar expanse 18.5 mm. 3. *M. similis* sp. nov., paratype, ♀ (MUT). Alar expanse 18.0 mm.

Nye, 1982 : 95.

Medium-sized clearwing moths with alar expanse 18-24 mm. Head with antenna slightly clavate, ciliate in male and without cilia in female, with a small hair tuft apically; labial palpus, frons and vertex smooth-scaled; proboscis well-developed. Forewing with transparent areas well-developed; veins R_4 and R_5 long stalked (Fig. 4); vein M_3 closer to Cu_1 than to M_2 . Hindwing transparent; vein M_2 arising from upper third of cross-vein; veins M_3 and Cu_1 short stalked (Fig. 4). Hind tibia smooth-scaled in female and slightly hair-tufted in male; first tarsomere extremely long, nearly as long as hind tibia and four terminal tarsomeres, smooth-scaled; four terminal tarsomeres covered with erect scales, forming two flat paddles. Male genitalia (Fig. 7) with uncus well-developed, triangular in lateral view, with long, apically short-split setae (Fig. 7j); tegumen well-developed; gnathos long, finger-shaped, with a roof-shaped lobe distally (Fig. 7a); valva (Fig. 7b) slightly broadened and rounded distally and pointed ventro-apically; about 3/4 of surface covered with long setae (Fig. 7h), and with slightly short setae (Figs 7f, g) basally and ventrally and short bifurcate setae apically; ventro-apically with a flat crista densely covered with long, short-split setae (Fig. 7i); crista sacculi densely covered with strongly pointed setae; saccus (Fig. 7c) rounded basally, somewhat longer than vinculum; aedeagus apically with two strong teeth laterally and a row of strong and short teeth ventrally (Fig. 7e). Female genitalia (Figs 5, 6) with ostium bursae well-sclerotized, issued from intersegmental membrane between 7th and

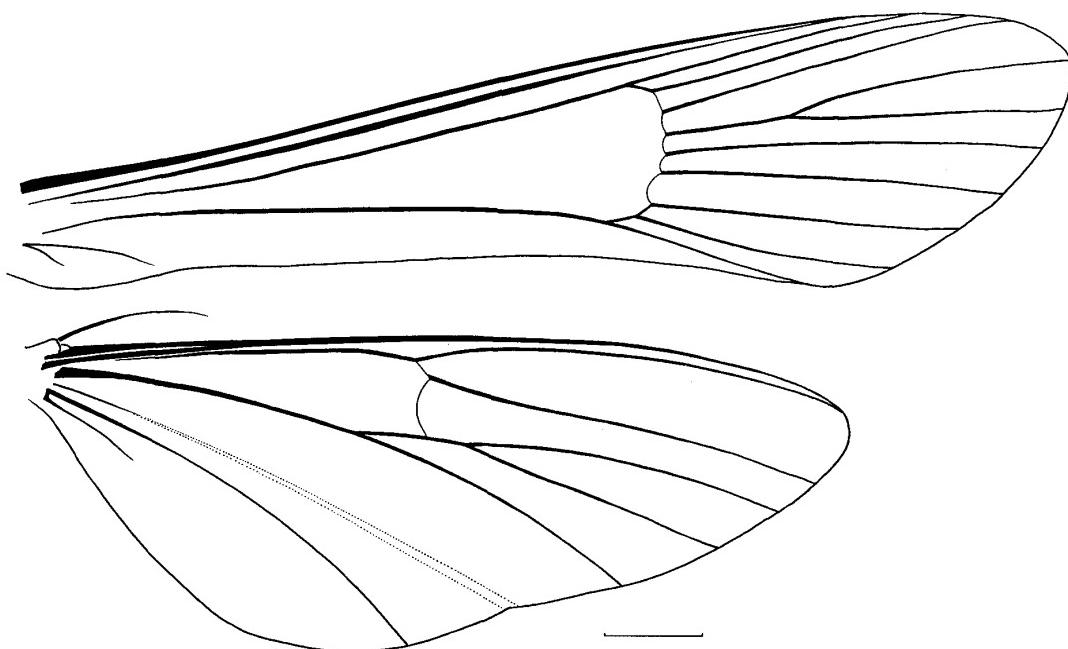


Fig. 4. Wing venation of *Macrotarsipus albipunctus* Hampson, [1893]. Scale bar : 1.0 mm.

8th segments, fastened with membrane only in basal part, with nearly flat interior side with lateral paddles and with salient, funnel-shaped external side with a more or less deep cut, sometimes with a few setae latero-apically; antrum membranous; corpus bursae globose without signa.

Superficially, the species of the genus *Macrotarsipus* are somewhat similar to some *Synanthedon* Hübner, [1819] and *Malgassesia* Le Cerf, 1922, but *Macrotarsipus* is clearly distinguishable by the very long hind tarsus with two flat paddles on four terminal tarsomeres, and by the structure of both male and female genitalia. From *Tipulamima* Holland, [1894], *Macrotarsipus* differs in the structure of the hind tarsus (with neither tuft nor paddles in *Tipulamima*) and in the female genitalia (male genitalia of *Tipulamima* are unknown).

Constitution. Presently we include in *Macrotarsipus* the following two species: *albipunctus* Hampson, [1893] and *similis* sp. nov.

Systematic position. Heppner and Duckworth (1981) placed *Macrotarsipus* in "Genera Unassigned to Subfamily". Based on the shape of the antenna (small hair tuft apically present) and venation of the fore- and hindwings, this genus could be included into Sesiinae, Synanthedonini, but the structure of its male and female genitalia is completely different from that of other genera of the Synanthedonini or other tribes of the Sesiinae. So currently the exact systematic position of *Macrotarsipus* remains unclear. We consider the present higher classification of the family Sesiidae, based virtually only on Holarctic genera (Niculescu, 1964, Naumann, 1971, Duckworth & Eichlin, 1977), is unsatisfactory, and in need of a revision with an obligatory inclusion of Oriental, Afrotropical and Neotropical genera.

Distribution. Oriental Region.

***Macrotarsipus albipunctus* Hampson (Figs 1, 4, 5)**

Macrotarsipus albipunctus Hampson, [1893] : 194, fig. 122. Type locality : Burma [Myanmar], Bhámo. Holotype female (BMNH); Le Cerf, 1917: 340; Gaede, 1933: 779, pl. 94, row b; Heppner & Duckworth, 1981: 43.

Macrotarsipus albipuncta Hampson [misspel.]—Hampson, 1919: 58.

Macrotarsipus albipunctatus [sic] Hampson—Dalla Torre & Strand, 1925: 7.

Description. Female (Fig. 1). Alar expanse 23.6 mm; body length 10.7 mm; forewing 10.2 mm; antenna 6.5 mm. Head: antenna entirely black with greenish sheen; frons dark brown with purple-green sheen; labial palpus dorsally black mixed with white, ventrally white; vertex black; pericephalic hairs black dorsally and white laterally. Thorax: patagium black with greenish sheen, with a few white scales laterally; tegula, meso- and metathorax entirely black with greenish sheen; thorax laterally black with greenish sheen, with a narrow white margin of mesopleura posteriorly. Legs: fore coxa black with greenish sheen, with a broad white external margin; hind tibia black with greenish sheen, with a small white spot at base of both pairs of spurs; both internal spurs black, external ones white; hind tarsus extremely long, basal tarsomere black with a narrow white line ventrally, other tarsomeres each with a bilobed tuft, black with green-violet sheen. Abdomen: dorsally entirely black with greenish sheen; ventrally black with violet-purplish sheen, with a few white scales on sternites 1+2, 4 and 5; anal tuft small, black with a narrow white tip. Forewing: costal margin black with purplish sheen, with a few yellowish scales before discal spot; Cu-stem, anal margin, discal spot and veins within external transparent area black with purplish sheen; apical area black with purplish sheen, with individual white scales between veins R_3-R_5 ; discal spot narrow with a small cuneiform projection proximally; transparent areas well-developed; external transparent area rounded apically, divided into 6 cells, about 6 times as broad as discal spot and about 4 times as broad as apical area; fork of veins R_4-R_5 on midway between discal spot and apical area; cilia brown with bronzed sheen. Hindwing: transparent; veins, discal spot and outer margin black with purplish sheen; discal spot small, cuneiform, reaching base of vein M_2 ; outer margin narrow, about thrice as narrow as cilia; cilia brown with bronzed sheen.

Female genitalia (genital preparation No. GA-046) (Fig. 5). Eighth sclerite relatively short, covered with long setae on distal half; posterior apophysis somewhat longer than anterior apophysis, papilla analis relatively broad and long with short setae; ostium bursae well-sclerotized, issued from intersegmental membrane between 7th and 8th segments, fastened with membrane only in basal part, with a nearly flat interior side with lateral paddles and with a salient external side funnel-shaped with rather deep cut, with a few setae latero-apically; antrum membranous; ductus bursae relatively short; corpus bursae globose without signa.

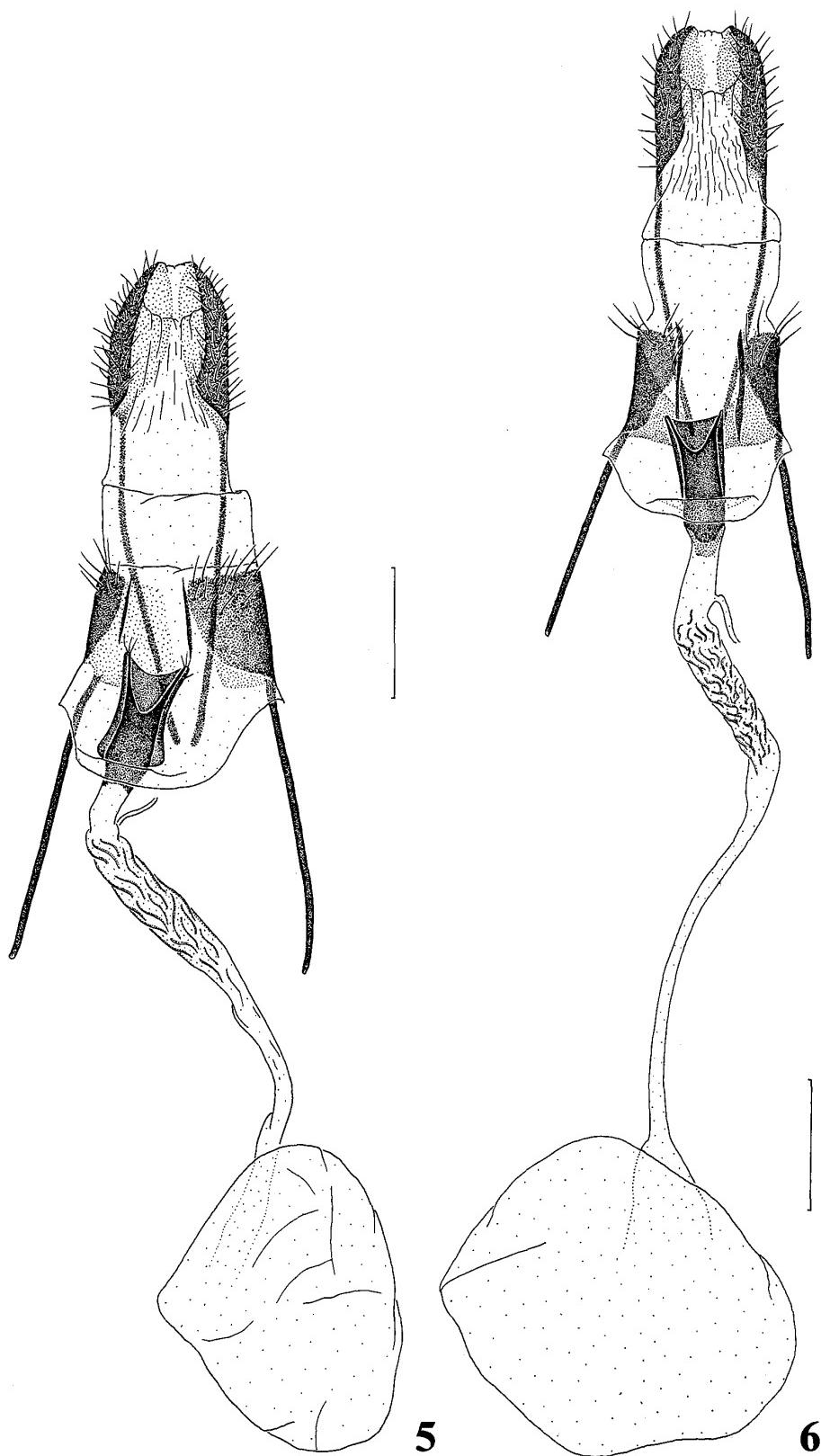
Male. Unknown.

Variability. Slightly varying in individual size only: alar expanse 22.0–24.0 mm.

Diagnosis. Superficially, *M. albipunctus* has virtually no differences in coloration from *M. similis* sp. nov., only being somewhat larger in size (alar expanse 18.0–18.5 mm in *similis* sp. nov.). But this species is clearly distinguishable from *similis* sp. nov. by the female genitalia (different shape of the ostium bursae and relatively longer ductus bursae in *similis* sp. nov.; compare with Fig. 6).

Bionomics. The host plant unknown. The specimen at hand from Vietnam was collected in the end of November.

Habitat. Unknown.



Figs 5-6. Female genitalia of *Macrotarsipus* spp. 5. *M. albipunctus* Hampson, [1893] (genital preparation No. GA-046). Scale bar: 0.5 mm. 6. *M. similis* sp. nov., paratype (genital preparation No. GA-061). Scale bar: 0.5 mm.

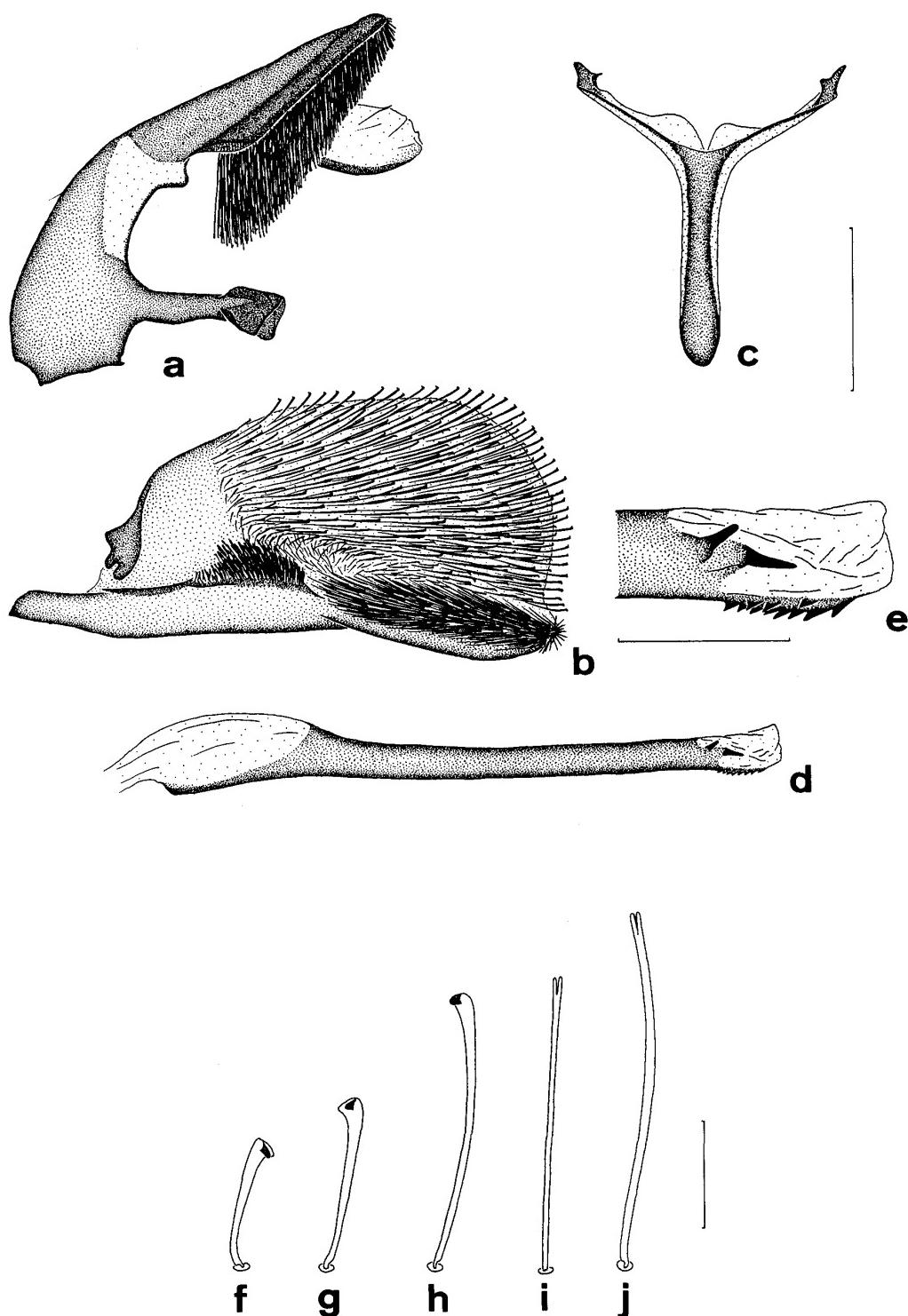


Fig. 7. Male genitalia of *Macrotarsipus similis* sp. nov., holotype (genital preparation No. GA-060). a. Tegumen-uncus complex. b. Valva. c. Saccus. d. Aedeagus. e. Apical part of aedeagus. f-h. Setae of inner surface of valva. i. Seta of ventro-apical crista of valvae. j. Seta of uncus. Scale bars: 0.5 mm for a-d, 0.2 mm for e, 0.1 mm for f-j.

Distribution. This species is known for sure only from the type locality : Myanmar, Bhámo, and from central Vietnam (new record).

Material examined: 1 ♀ (genital preparation No. GA-046), Vietnam, Prov. Gialai Kontum, Buonluoi vic. near Pleiku, 17-20. XI. 1988, A.V. Gorokhov leg. (CG).

***Macrotarsipus similis* sp. nov. (Figs 2-3, 6-7)**

Description. Male (holotype) (Fig. 2). Alar expanse 18.5 mm ; body length 8.5 mm ; forewing 8.3 mm ; antenna 6.5 mm. Head: antenna black with green-violet sheen ; frons black with blue-green sheen, with a narrow white stripe laterally ; labial palpus ventrally white, externally dark brown to black mixed with white at base of mid joint, internally and dorsally dark brown to black ; vertex black with green-violet sheen ; pericephalic hairs black with a few yellow scales dorsally and white laterally. Thorax : patagium black with blue sheen, with a few white scales laterally ; tegula black with bronzed-purplish sheen, with a somewhat paler spot at base of forewing anteriorly ; mesothorax black with violet sheen ; metathorax black with violet sheen, with admixture of white hair-like scales ; thorax laterally grey-brown with purplish sheen, with a small white to pale yellow spot. Legs : fore coxa black with greenish sheen, with a narrow, white external and distal margin ; hind tibia black with greenish sheen, with two narrow white rings at base of both pairs of spurs ; spurs black mixed with white ; hind tarsus extremely long, black with bluish sheen, basal tarsomere with a narrow white line ventrally and a small white spot dorso-distally ; tarsomeres 2-5 each with a bilobed tuft, black with greenish sheen. Abdomen : entirely black with violet sheen. Forewing : black with greenish sheen, with a few white scales on apical area between veins R_3 - M_1 ; discal spot narrow, with a minute cuneiform projection proximally ; transparent areas well-developed ; external transparent area extremely large, divided into 6 cells, level to vein M_1 about 6.5 times as broad as discal spot and apical area ; fork of veins R_4 - R_5 closer to discal spot than to apical area ; cilia black. Hindwing : transparent ; veins, discal spot and outer margin black ; discal spot very small, reaching base of vein M_2 ; cross-vein between base of veins M_2 and M_3 - Cu_1 without scales, yellow ; outer margin about thrice as narrow as cilia ; cilia black, anally white.

Male genitalia (holotype, genital preparation No. GA-060) (Fig. 7). Uncus well-developed, triangular in lateral view, with long apically short-splitted setae (Fig. 7j) ; tegumen well-developed ; gnathos long, finger-shaped, with a roof-shaped lobe distally (Fig. 7a) ; valva (Fig. 7b) slightly broadened and rounded distally, pointed ventro-apically ; about 3/4 inner surface covered with long setae (Fig. 7h) and with slightly shortened setae (Figs 7f, g) basally and ventrally and short bifurcate setae apically ; ventro-apically with a flat crista densely covered with long short-splitted setae (Fig. 7i) ; crista sacculi densely covered with strongly pointed setae ; saccus (Fig. 7c) rounded basally, somewhat longer than vinculum ; aedeagus somewhat longer than valva, apically with two strong teeth laterally and a row of strong and short teeth ventrally (Fig. 7e).

Female (Fig. 3). Abdomen somewhat more robust ; alar expanse 18.0 mm ; body length 7.9 mm ; forewing 8.0 mm ; antenna 5.5 mm. Thorax with patagium black with green sheen ; tegula black with green sheen, with a few yellow scales at inner margin. Legs with fore coxa with more number of white scales ; hind tarsal tuft black with violet sheen. Abdomen black with greenish sheen ; sternite 3 ventrally with a few white scales laterally ; sternites 4 and 5 each with a narrow white stripe proximally ; anal tuft with white scales laterally. Forewing with a few yellow scales at costal margin. Colour pattern otherwise as in male.

Female genitalia (paratype, genital preparation No. GA-061) (Fig. 6). Eighth sclerite

relatively short, covered with long setae on distal half; posterior apophysis somewhat longer than anterior apophysis; papilla analis relatively broad and long with short setae; ostium bursae well-sclerotized, issued from intersegmental membrane between 7th and 8th segments, fastened with membrane only in basal part, with a nearly flat interior side with lateral paddles and with a salient external side funnel-shaped with rather deep cut, without a few setae latero-apically; antrum membranous; ductus bursae narrow, relatively long; corpus bursae globose without signa.

Variability. Slightly varying in individual size: alar expanse 18.0–18.5 mm; body length 7.9–8.5 mm; forewing 7.9–8.3 mm; antenna 5.5–6.5 mm. One male has a more white labial palpus, a few yellow scales at the inner margin of the tegula, abdomen with green sheen; tergites 6 and 7 each with a narrow, snow-white distal margin with blue sheen; sternite 1+2 entirely white, sternites 3 and 5 each with white scales laterally; sternite 4 nearly white; anal tuft with white scales distally.

Diagnosis. From *M. albipunctus*, *similis* sp. nov. differs only in the somewhat smaller size (alar expanse 22.0–24.0 mm in *albipunctus*) and in the shape of the female genitalia (for the ostium bursae and a shorter ductus bursae in *albipunctus*; compare with Fig. 5).

Bionomics. The host plant is unknown. The specimens of the type series were collected in the middle of August and in October in Thailand and in the middle of March in Indonesia.

Habitat. Dark tropical jungle.

Distribution. Thailand (Prov. Chanthaburi and Chiang Mai) and Indonesia (Java).

Material examined: Holotype. ♂ (genital preparation No. GA-060), Thailand, Chanthaburi, Phliu, ca. 30 m, 4–7 & 9. X. 1985, H. Kuroko, S. Moriuti, T. Saito & Y. Arita leg. (MUT). Paratypes, 1 ♂ 1 ♀ (genital preparation No. GA-061 (♀)), Thailand, Chanthaburi, Plew Chanthaburi, 11 and 16. VIII. 1981, H. Kuroko, S. Moriuti, Y. Arita & Y. Yoshiyasu leg. (MUT); 1 ♂, Thailand, Chiang Mai, Fang, ca. 450 m, 29–31. X. 1985, S. Moriuti, T. Saito & Y. Arita leg. (MUT); 2 ♂ (genital preparation No. GA-055), Indonesia, Java, Darmaga, near Bogor, 10. III. 1985, K. Yamagishi leg. (MUT).

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要 約

東洋区の *Macrotarsipus* 属 (鱗翅目, スカシバガ科) の再検討 (有田 豊・Oleg G. Gorbunov)

Macrotarsipus 属は Hampson により [1893] 年に創設された属で、その模式種, *M. albipunctus* は、ビルマ (ミャンマー) で得られた後脚が飛び抜けて長い大変スマートなスカシバガである。この属には現在までに 5 種が知られている (*M. belia* は *M. africana* のシノニム) が、*M. albipunctus* 以外の 4 種はすべてアフリカ熱帯の種である。これらアフリカの種類は *M. albipunctus* と近縁関係がない (Robinson *et al.*, 1994) のでここでは *Macrotarsipus* 属から除いた。したがってこの属には *M. albipunctus* と *M. similis* sp. n. の 2 種が含まれることになる。

M. albipunctus Hampson, [1893] (Figs 1, 4-5)

ミャンマー、ベトナム (新記録)。ベトナムでは 11 月に成虫が採集されている。食草や生態的なことなどは不明である。

M. similis sp. n. (Figs 2-3, 6-7)

前種, *M. albipunctus* に酷似するが、開張が *albipunctus* では 22.0-24.0 mm であるのに対して *similis* sp. n. では 18.0-18.5 mm と大変小さい。ゲニタリア (♀) も異なる (Fig. 5)。タイから 8 月と 10 月に、インドネシアから 3 月に成虫が採れているが食草などは不明である。

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